

REMARKS

This is a full and timely response to the non-final Official Action mailed **July 26, 2004** (Paper No. 20040720). Reconsideration of the application in light of the following remarks is respectfully requested.

No claims are amended by the present paper. New claims 102 and 103 are added. Thus, claims 1-103 are pending for further consideration

The sole issue raised in the recent non-final Office Action is a rejection of claims 1-101 as being unpatentable under 35 U.S.C. § 103(a) over the combined teachings of U.S. Patent Application Publication No. 2003/0015983 to Montero et al. ("Montero") and U.S. Patent No. 6,128,905 to Fahlsing ("Fahlsing"). For at least the following reasons, this rejection is respectfully traversed.

Claim 1 recites:

A localized system for dissipating heat generated by an electronic component, said system comprising:
a controllable cooling element; and
a control system for controlling said cooling element;
wherein said control system adjusts a speed of operation of said cooling element in response to variations in power consumption of said electronic component.

The purpose of controlling the cooling element in response to the power consumption of the electronic component is explained, for example, in paragraph 0040 of Applicant's specification.

[0040] Because the control system monitors the power that is consumed by the IC (100) with the control function (120c), the control system may preemptively increase the RPM of the cooling element (101) and dissipate the heat as [it] is produced instead of waiting for the temperature to increase before cooling the IC (100). In other words, monitoring the IC's (100) power consumption enables the

control system to predict the amount of heat that will be generated by the IC (100) and accordingly adjust the cooling element (101) to compensate for the increased heat.

Similar to claim 1, independent claim 66 recites: “A system for dissipating heat generated by an electronic component, said system comprising means for adjusting a speed of operation of a cooling element in response to variations in power consumption of said electronic component.” Independent method claim 40 similarly recites: “A method of dissipating heat generated by an electronic component, said method comprising adjusting a speed of operation of a cooling element with a control system in response to variations in power consumption of said electronic component.”

In contrast, the combination of Montero and Fahlsing fail to teach or suggest a control system or method that adjusts the speed of operation of a cooling element, such as a fan, based on variations in the power consumption of an electronic component being cooled.

Montero teaches a system in which the *temperature* of an electronic component, i.e., a CPU, is monitored. Based on the temperature of the CPU, one or two fans are operated at variable speeds to cool the CPU. (*See, for example*, Montero, page 4, Tables 1, 2 and 3 and accompanying text). Montero does not teach or suggest monitoring *power consumption* and adjusting fan speed based on power consumption. Consequently, Montero merely represents the prior art addressed in paragraph 0004 of Applicant’s specification.

On the other hand, Fahlsing is entirely irrelevant to both Montero and the Applicant’s claims. Fahlsing teaches a “Back Pressure Optimizer” in a full-scale power plant that is producing power by generating steam that turns turbines to produce electricity. (Fahlsing, col. 1, lines 13-19). After the steam is used to produce electricity, it is condensed back into

liquid water in a condenser (14). (Fahlsing, col. 1, lines 45-64). The condenser uses fans which can operate at variable speeds to control the temperature, back pressure and consequent efficiency of the condenser.

Fahlsing teaches monitoring the *power consumption of the condenser subsystem as compared to the electrical output of the entire power plant* and adjusting fan speed accordingly to optimize the output of the power plant. (Fahlsing, col. 5, lines 57-64 and col. 6, lines 1-18). Thus, Fahlsing does not teach or suggest monitoring the power consumption of an electronic component. Fahlsing does not teach or suggest adjusting the operation of a cooling element for an electronic component based on the power consumption of that electronic component as claimed.

Neither Montero nor Fahlsing, taken alone or together, teach or suggest monitoring the power consumption of an electronic component. Neither Montero nor Fahlsing, taken alone or together, teach or suggest adjusting the speed of operation of a cooling element for an electronic component based on that component's power consumption as claimed.

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." M.P.E.P. § 2143.03. Accord. M.P.E.P. § 706.02(j). Consequently, the rejection of claims 1-101 based on the combination of Montero and Fahlsing should be reconsidered and withdrawn.

Additionally, Fahlsing is clearly non-analogous art to Montero and cannot be properly combined therewith. For at least this further reason, the rejection based on a combination of Montero and Fahlsing should be reconsidered and withdrawn.

Many of the dependent claims in the present application also recite further subject matter that is also neither taught nor suggested by Montero and Fahlsing. For example, claim 7 recites:

wherein said control system comprises:
a first control function for receiving a tachometer output signal from said cooling element and outputting a control signal for adjusting said speed of said cooling element, said tachometer output signal being a measurement of said speed of said cooling element; and
a second control function for modifying a control signal output from said first control function, said modification based on a reading of said power consumption of said electronic component;
wherein, after said control signal is modified by said second control function, said control signal is input into said cooling element and adjusts said speed of said cooling element.

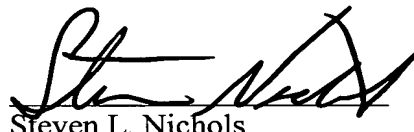
These elements are neither taught nor suggested by Montero and Fahlsing. Moreover, the outstanding Office Action fails to indicate how or where such features are found in the prior art. Consequently, the rejection of claim 7, its dependent claims and other similar claims (e.g., claims 9-23, 46, 47, 55 and 56) should be reconsidered and withdrawn.

Claim 37 further recites: “wherein said control system is configured with rules for recognizing trends in said power consumption and adjusting said speed of said cooling element according to said rules.” These elements are neither taught nor suggested by Montero and Fahlsing. Moreover, the outstanding Office Action fails to indicate how or where such features are found in the prior art. Consequently, the rejection of claim 37, its dependent claims and other similar claims (e.g., claim 62 and 88) should be reconsidered and withdrawn.

The newly-added claims are also thought to recite subject matter that is patentable over the prior art of record for the same reasons as given above with respect to claims 1, 40 and 66. Therefore, examination and allowance of the newly-added claims is respectfully requested.

For the foregoing reasons, the present application is thought to be clearly in condition for allowance. Accordingly, favorable reconsideration of the application in light of these remarks is courteously solicited. If the Examiner has any comments or suggestions which could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,



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DATE: 25 October 2004

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